

In re: Kwech *et al.*
Serial No. 10/808,879
Filed: March 22, 2004
Page 11

REMARKS

Introduction

The Applicant **cancels** Claims 26–36, which were previously withdrawn in response to the Examiner's restriction requirement.

The Applicant **adds** new Claims 37–48. New independent claim 37 recites a tool slide servomotor in one-to-one geared communication with an adjustable tool mechanism. Moreover, dependent Claims 38–48 largely reflect the recitations of examining Claims 2–9 and dependent Claims 20–21. Given that the number of new claims is equal to the number of canceled claims, the Applicant does not consider any fee to be due for these new claims.

Information Disclosure Statement

The Examiner returned a copy of the Applicant's Information Disclosure Statement but only initialed citation numbers 19–26 (Pages 2 and 3 of the three-page IDS). The Applicant respectfully requests that the Examiner consider and initial citation numbers 1–18 listed on Page 1 of the IDS.

Rejections Under 35 U.S.C. § 103(a)

The Examiner rejects all of pending claims 1–25 under 35 U.S.C. § 103(a) as being obvious by U.S. Patent No. 6,447,220 (Ricci 2002) in view of U.S. Patent No. 4,758,121 (Kwech 1988) and admitted prior art.

The Examiner states that the Ricci '220 patent shows all of the elements of each pending claim other than the regulating controller and the chuck body having a self-centering means. The Examiner combines the Kwech '121 patent with the Ricci '220 patent to account for these claimed attributes of the Applicant's invention.

In re: Kwech *et al.*
Serial No. 10/808,879
Filed: March 22, 2004
Page 12

The Applicant respectfully points out that, contrary to the Examiner's comments, the Ricci '220 patent fails to show the claimed radial adjustment means comprising a tool slide servomotor in one-to-one communication with an adjustable tool mechanism.

The Examiner cites the Ricci '220 patent (col. 11, lines 24-25) as showing "an AC (electrically powered) variable gearbox servomotor having an output shaft with a one-to-one geared communication with said cutting tool adjustment shaft." The Examiner, however, seems to misinterpret the cited portion of the patent. The Ricci '220 patent (col. 11, lines 24-25) actually states that Ricci's "third drive means includes a variable speed AC motor having an output shaft coupled to the drive rod."

The terms within the quoted section of the Ricci patent require some explanation for clarity. Ricci (col. 11, lines 13-24; col. 8, lines 35-42) uses the term "drive rod" to denote an elongated mechanism that runs axially within the cylindrical bar member of Ricci's facing device. Accordingly, the referenced "drive rod" is comparable to the longitudinal "lead screw" (Ref. No. 16) in Ricci's boring device. Furthermore, the Ricci '220 patent states (Claim 1) that the "third drive means" is the mechanism by which Ricci's device adjusts the radial extension of the slide that controls the position of Ricci's tool bit.

Although Ricci (col. 11, lines 24-25) states that the third drive means includes a variable speed AC motor coupled to the longitudinal drive rod, Ricci neither shows nor suggests that the motor and the radially adjustable slide would have a one-to-one communication. In fact, Ricci teaches directly against one-to-one communication (col. 9, lines 32-41):

The hex [drive] rod is, in turn, adapted to be driven by the AC variable speed servo motor whereby spur gears 328 and 322 provide a gear reduction to the rotational speed of the bevel gear 318 and, thus, the pinion shaft 308 on which the miter gears 306 and 310 reside. Rotation of the miter gear 310 imparts rotation to the threaded rod 280 causing translation of the slide 264 relative to its base member 252.

In re: Kwech *et al.*
Serial No. 10/808,879
Filed: March 22, 2004
Page 13

By teaching gear reduction between the motor and the slide mechanism, Ricci necessarily teaches away from the present claims. Ricci requires special gears of varying sizes between the motor and the slide to accomplish radial translation of the tool bit (col. 9, lines 18–31). With such gearing as disclosed by Ricci, one-to-one communication is not achieved.

The Applicant has explained in the original specification (*e.g.*, Paragraphs 10, 16, 22, and 42) that one-to-one communication between the servomotor and the radially adjustable tool mechanism eliminates rounding errors associated with using different sized gears. No calculations or compensations are required to account for the rounding. Moreover, the one-to-one ratio between the tool slide servomotor and the adjustable tool mechanism permits more accurate prediction and tracking of the tool's position. Given that Ricci teaches gear reduction—and thus directly against the claimed one-to-one communication—the Applicant respectfully states that the Examiner's rejection under 35 U.S.C. § 103 is inappropriate.

Conclusion

The Examiner has not shown that the one-to-one communication between the servomotor and the tool adjustment mechanism would have been obvious to one skilled in the art at the time of the Applicant's invention. Each of the pending independent claims includes this recitation. As such, the Applicant respectfully requests that the Examiner remove the rejections from the claims and issue a Notice of Allowance accordingly.

In re: Kwech *et al.*
Serial No. 10/808,879
Filed: March 22, 2004
Page 14

The Applicant is paying a fee for a one month extension of time to respond as a small entity. The Applicant considers this to be the only fee due for this Response. If the Examiner disagrees, then the Examiner is authorized to charge the appropriate fee, or credit any over payments, to Deposit Account No. 50-0332.

Respectfully submitted,


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